

## CLAIMS

1. A method of searching for work elements for processing in a computing system having a primary queue of work elements and at least one secondary queue of work elements, a numerical priority value being associated with each of said work elements, the method comprising:

setting an initial priority bar;

processing work elements from said primary queue until reaching a work element having a priority less than said initial priority bar;

setting a priority bar equal to a minimum of a priority limit and a highest priority on said at least one secondary queue;

if said primary queue contains a work element having a priority greater than or equal to said priority bar, processing said work element;

if said primary queue contains a work element having a priority less than said priority bar, processing a work element from said at least one secondary queue.

2. The method of claim 1 wherein:

said work elements are arranged in each of said primary queue and said at least one secondary queue in descending priority order.

3. The method of claim 1 wherein:

determining said initial priority bar is determined based on a priority limit and a priority vector.

4. The method of claim 3 wherein:

said priority vector is determined based on the highest priority work elements in said at least one secondary queue.

5. The method of claim 4 wherein:

a priority value in said priority vector for said primary queue is initially set to zero.

6. The method of claim 1 further comprising:

if said primary queue has no work elements, setting a maximum priority value for said primary queue to  $-1$ .

7. A system of searching for queued work elements for processing, the system comprising:

a primary queue of work elements, a numerical priority value being associated with each of said work elements;

at least one secondary queue of work elements, a numerical priority value being associated with each of said work elements,

a processor in communication with said primary queue and said at least one secondary queue, said processor implementing:

setting an initial priority bar;

processing work elements from said primary queue until reaching a work element having a priority less than said initial priority bar;

setting a priority bar equal to a minimum of a priority limit and a highest priority on said at least one secondary queue;

if said primary queue contains a work element having a priority greater than or equal to said priority bar, processing said work element;

if said primary queue contains a work element having a priority less than said priority bar, processing a work element from said at least one secondary queue.

8. The system of claim 7 wherein:

said work elements are arranged in each of said primary queue and said at least one secondary queue in priority order.

9. The system of claim 7 wherein:

said processor determining said initial priority bar is based on a priority limit and a priority vector.

10. The system of claim 9 wherein:

said priority vector is determined based on the highest priority work elements in said primary queue and said at least one secondary queue.

11. The system of claim 10 wherein:

said processor initially sets a priority value in said priority vector for said primary queue to zero.

12. The system of claim 7 further comprising:

if said primary queue has no work elements, said processor setting a maximum priority value for said primary queue to  $-1$ .

13. A storage medium encoded with machine-readable computer program code for searching for queued work elements for processing a primary queue of work elements and at least one secondary queue of work elements, a numerical priority value being associated with each of said work elements, said storage medium including instructions for causing a processor to perform:

setting an initial priority bar;

processing work elements from said primary queue until reaching a work element having a priority less than said initial priority bar;

setting a priority bar equal to a minimum of a priority limit and a highest priority on said at least one secondary queue;

if said primary queue contains a work element having a priority greater than or equal to said priority bar, processing said work element;

if said primary queue contains a work element having a priority less than said priority bar, processing a work element from said at least one secondary queue according to priority values in said at least one secondary queue.

14. The storage medium of claim 13 wherein:

said work elements are arranged in each of said primary queue and said at least one secondary queue in priority order.

15. The storage medium of claim 13 wherein:

determining said initial priority bar is determined based on a priority limit and a priority vector.

16. The storage medium of claim 15 wherein:

said priority vector is determined based on the highest priority work elements in said at least one secondary queue.

17. The storage medium of claim 16 wherein:

a priority value in said priority vector for said primary queue is initially set to zero.

18. The storage medium of claim 13 further comprising instructions for causing said processor to perform:

if said primary queue has no work elements, setting a maximum priority value for said primary queue to  $-1$ .